Calf Math User Guide

Follow this user guide as it explains how to navigate through the 7 sections of the Calf Math program.

The different colored cells throughout Calf Math have different meanings, as explained below:

Input Cells	Conventional Semen
Calculating Cells	GenChoice 90™ Semen
Results Cells	GenChoice 75™ Semen

Section 1

500	Number Cows	Enter the average total number of lactating cows in the herd. Do not include dry cows or the calculator is overly optimistic.
200	Number Breeding Age Heifers	Enter the average total number of heifer bred first service in a year.
33%	Annual Cull Rate	Enter the most recent annual culling rate.
0%	Percent Annual Growth (Goal)	0% growth would indicate the producer plans to maintain current herd size. If wanting enough replacements to do some voluntary culling within the lactation herd at least a 5% goal is recommended. A herd can choose a negative number if planning to downsize the current herd.

Section 2

The default numbers may be used for conception rate and female sex ratios for all the semen products. However, if herd-specific information is available, it can be used to get the most accurate Calf Math results. The default conception rate for GenChoice 90 on cows (3% lower than the conception rate with conventional semen) is based on 5,000 observations collected by Genex. Within the observations, the animals bred were "cherry picked" meaning the cows were in their first lactation and showed strong heats. If not planning to "cherry pick" it is recommended to use the -15% conception rate expected for sexed semen. The GenChoice 75 default uses the same conception rates, at this time. The conception rate for conventional beef semen is slightly higher for both cows and heifers because of the perception that beef semen settles better. There is no literature to support this theory; however, note that a straw of conventional beef semen contains 3-4 times more sperm cells than conventional dairy semen. All sorted semen products contain the same number of sperm cells.

	DAIRY						BEEF			
	Conventional		GenChoice 90		GenChoice 75		Conventional		GenChoice 75	
	Cows	Heifers	Cows	Heifers	Cows	Heifers	Cows	Heifers	Cows	Heifers
Conception Rate	35%	62%	32%	47%	32%	47%	40%	64%	32%	47%
Female Sex Ratio	48%	48%	90%	90%	75%	75%	48%	48%	25%	25%

Section 3

Designate the percentage of each semen product the herd will use. 0% can be used as an input if the herd wishes not to use a product. The total must equal 100%.

Cows

Percent Dairy Conventional	55%
Percent Dairy GenChoice 90	0%
Percent Dairy GenChoice 75	30%
Percent Beef Conventional	15%
Percent Beef GenChoice 75	0%
Total	100%

Heifers

Percent Dairy Conventional	20%
Percent Dairy GenChoice 90	65%
Percent Dairy GenChoice 75	0%
Percent Beef Conventional	0%
Percent Beef GenChoice 75	15%
Total	100%

Section 4

The calculations, in the gray boxes below, are made by the program. The program calculates the overall conception rate from the new mix of semen products and the expected average services per conception. It also estimates the number of semen units needed for each product. The left column is for cows and the right column is for heifers.

Overall Conception Rate	35%
Services per Conception	2.9
Total Units	1275
Dairy Conventional Units	701
Dairy GenChoice 90 Units	0
Dairy GenChoice 75 Units	383
Beef Conventional Units	191
Beef GenChoice 75 Units	0

Overall Conception Rate	50%
Services per Conception	2.0
Total Units	392
Dairy Conventional Units	78
Dairy GenChoice 90 Units	255
Dairy GenChoice 75 Units	0
Beef Conventional Units	0
Beef GenChoice 75 Units	59

Section 5

The inputs in this section have a research-based default, but can be updated with herd-specific data if available. Without the inputs in this section, Calf Math is very optimistic in the number of calves produced.

Calving Interval	13.5
Percent "DNB"	2%
Pregnant Cows Culled	13%
Pregnancy Loss (Post Preg Check)	10%
Stillborn % of Male Calves	8%
Stillborn % of Female Calves	4%
Heifer Rearing Loss	10%

Age at First Calving	24.5
Heifer Death Loss (Post Preg Check)	5%
Pregnancy Loss (Post Preg Check)	10%
Stillborn % of Male Calves	13%
Stillborn % of Female Calves	9%
Heifer Rearing Loss	10%

Section 6

This section totals the number of calves produced according to the inputs used above. The number of calves produced from heifers and cows is calculated in separate columns.

	Cows		Heifers
Total Dairy Male Calves	99	Total Dairy Male Calves	26
Total Dairy Female Calves	123	Total Dairy Female Calves	81
Total Beef Male Calves	27	Total Beef Male Calves	16
Total Beef Female Calves	25	Total Beef Female Calves	5
Total Calves	274	Total Calves	128

Section 7

The first number below shows the number of dairy heifers needed annually to meet the growth goal, keeping in mind the herd size and the annual cull rate.

The second number shows how many dairy heifers are projected to be produced annually using the selected mix of semen products.

Annual Dairy Heifers Needed	**183**
Number of Dairy Heifers Yielded	**204**